Mark Scheme (Results)

June 2022

Pearson BTEC Nationals
In Applied Human Biology (21327L)
Unit 3: Human Biology and Health Issues

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Unit 3: Human Biology and Health Issues

General marking guidance

- All learners must receive the same treatment. Examiners must mark the first learner in exactly the same way as they mark the last.
- Mark grids should be applied positively. Learners must be rewarded for what they have shown they can do rather than be penalised for omissions.
- Examiners should mark according to the mark grid, not according to their perception of where the grade boundaries may lie.
- All marks on the mark grid should be used appropriately.
- All the marks on the mark grid are designed to be awarded. Examiners should always award full marks if deserved. Examiners should also be prepared to award zero marks, if the learner's response is not rewardable according to the mark grid.
- Where judgement is required, a mark grid will provide the principles by which marks will be awarded.
- When examiners are in doubt regarding the application of the mark grid to a learner's response, a senior examiner should be consulted.
- Crossed-out work should be marked UNLESS the candidate has replaced it with an alternative response.
- Phonetic spelling should be accepted.

Specific marking guidance

The mark grids have been designed to assess learners' work holistically.

Rows in the grids identify the assessment focus/outcome being targeted. When using a mark grid, the 'best fit' approach should be used.

- Examiners should first make a holistic judgement on which band most closely matches the learner's response and place it within that band. Learners will be placed in the band that best describes their answer.
- The mark awarded within the band will be decided based on the quality of the answer in response to the assessment focus/outcome and will be modified according to how securely all bullet points are displayed at that band.
- Marks will be awarded towards the top or bottom of that band depending on how they have evidenced each of the descriptor bullet points.

Activity 1: Discuss how the article uses scientific information to present the sexually transmitted infection (STI) issue.

(12 marks)

Assessment focus	Band 0	Band 1	Band 2	Band 3	Band 4
	0	**1–3**	**4–6**	**7–9**	**10–12**
Inter-pretation, analysis and evaluation of scientific information.	Level of response not worthy of credit.	Generalised comments about how the health issue is presented, with limited attempt to consider any of the following: • how the article has interpreted and analysed the scientific information to support the conclusions/ judgements being made. • the validity and reliability of data.	The presentation of the health issue is discussed, partially supported by a consideration of some of the following: • how the article has interpreted and analysed the scientific information to support the conclusions/ judgements being made. • the validity and reliability of data.	The presentation of the health issue is discussed, mostly supported by a consideration of: • how the article has interpreted and analysed the scientific information to support the conclusions/ judgements being made. • the validity and reliability of data.	The presentation of the health issue is discussed, consistently supported throughout by the consideration of: • how the article has interpreted and analysed the scientific information to support the conclusions/ judgements being made. • the validity and reliability of data.
		Limited discussion that contains generic assertions rather than considering different aspects.	Displays a partially developed discussion that considers some different aspects.	Displays a developed discussion that considers different aspects.	Displays a well-developed and logical discussion that clearly considers a wide range of different aspects.

Indicative content

Learners:

- **may include other valid suggestions, not listed below, which should be credited**
- **may cover a number of examples from the list below**
- **would NOT be expected to cover all points to get full marks.**

Interpretation and analysis

- the data throughout the article comes solely from the UK. Do these trends extend to other populations?
- data from the Daily Mail for Figure 1, but NHS for Figure 2 – quality of graphs
- a description and data for only two STIs are given in the article – syphilis, chlamydia, even though a third is also mentioned in the introduction (gonorrhoea). Is there a reason for this which is not mentioned – increased testing?
- there are far more STIs. Have the three that have been described been selected to show the comparison between male and female? What about data on other STIs?
- rate of STIs is increasing, more men affected than women generally – headline data. Syphilis data supports this, but chlamydia is a reverse trend and doesn't actually show an increasing trend
- many cases go undiagnosed so data may underrepresent the number of STIs– asymptomatic or stigma around seeking medical help. This leads to long-term complications – knock-on costs for medical care, mental health of individuals
- raises issue of transmission between mother to child but there is no data to support this
- regular testing would detect more cases allowing treatment before serious consequences develop. Funding has been cut for this aspect, which is a false economy, e.g. NHS very bad at prevention and health promotion but that would be 9x as cost effective as trying to mitigate the illnesses/disease not prevented and better outcomes for the patients involved
- included within National Curriculum but parents can opt children out of this aspect of education. No indication of how many actually opt out
- no indication of how people can stay educated about symptoms and treatment beyond school aspect.

Validity and reliability

- article is supported with references to the WHO, the NHS and respected/peer reviewed scientific journals
- some sources of data are credible – figures quoted from the graph
- many website-based sources and news articles are used that may not be valid or reliable
- Figures 1 and 2 do not provide any information about the individuals being diagnosed so other factors or trends cannot be considered, e.g. age, number of sexual partners, etc
- the discrepancy in Figure 2 between male and female chlamydia sufferers could be related to social gender issues
- although mentioned briefly at the end, the article does not qualify that the data regarding diagnosed cases cannot account for those suffering from STIs who do not seek medical help
- data for consultations for men and women does not give any indication of nature of visit so is essentially irrelevant – need data on seeking medical assistance for STIs
- data comes from UK, Britain and England and so comparisons could be invalid/unreliable
- fewer peer-reviewed journals compared with the number of website-based citations and opinions.

Activity 2: Discuss the key factors affecting the STI issue.

(16 marks)

Assessment focus	Band 0	Band 1	Band 2	Band 3	Band 4
	0	**1–4**	**5–8**	**9–12**	**13–16**
Understanding the key factors that affect the health issue.	Level of response not worthy of credit.	Demonstrates limited knowledge and understanding of the key factors affecting the health issue with generalised comments made.	Demonstrates adequate knowledge and understanding of the key factors affecting the health issue.	Demonstrates good knowledge and understanding of the key factors affecting the health issue.	Demonstrates comprehensive knowledge and understanding of the key factors affecting the health issue.
		Limited or no reference made to the article.	Attempts to use the article through the selection of some relevant aspects to support answer.	Sustained and logical connections made to the article through the selection of relevant aspects to support answer.	Sustained and comprehensive links made to the article through the selection of a wide range of relevant aspects to support answer.
		Limited discussion that contains generic assertions rather than considering different aspects.	Displays a partially developed discussion that considers some different aspects.	Displays a developed discussion that considers different aspects.	Displays a well-developed and logical discussion that clearly considers a wide range of different aspects.

Indicative content

Learners:

- **may include other valid suggestions, not listed below, which should be credited**
- **may cover a number of examples from the list below**
- **would NOT be expected to cover all points to get full marks.**

Key factors

- the number of STIs in the population
- range of STIs with a range of symptoms
- some STIs are difficult to self-diagnose or recognise from the symptoms alone
- the difference in potential risks between men and women
- economic issues for carrying out testing and providing treatment
- the false economy of inadequately funding sexual health services
- possible ethical issues in obtaining data surrounding STI diagnosis
- the dangers of untreated STIs
- range of possible social issues, such as social stigma surrounding STIs, which is a strong discouragement to self-referral
- changing sexual attitudes may reduce stigma but lead to increased rates of transmission
- religious/cultural considerations
- obstacles to obtaining proper treatment, including lack of education, flawed self-diagnosis, and inadequate access to sexual health services
- the physiological differences in male and female anatomy that can lead to greater complications for women
- possible effects of infertility, miscarriage, and risks to the unborn child
- possible long-term effects on mental health in relation to STIs
- different rates of GP consultation between men and women
- the influence of the media and public perception on the issue
- no environmental issues to consider with STIs
- the level of awareness of and knowledge concerning STI among the general population is significant for determining rates of transmission and timely self-referral.

- As the symptoms may be mild/be similar to flu/disappear after a few weeks, so people do not realise they have a serious infection/do not seek medical help.

Reference to article

- reference to statistics in the article
- makes reference to figures e.g. taken from first paragraph of article; syphilis increased by 165%; from paragraph above Figure 2; from paragraphs below Figure 3
- uses data from figures e.g. from Figure 1: numbers of cases in men and women compared at a given date; cases in men compared at different dates. From Figure 2: similarly and/or numbers compared between Figures 1 and 2. From Figure 3 numbers quoted to compare consultation rates between men and women of a given age or to show a trend in rate with age
- uses data from Figures 1,2 and 3
- summarises evidence
- quotes studies
- uses key terms that are explained in the glossary.

Activity 3: Explain how different organisations/individuals influence the STI issue.

(10 marks)

Assessment focus	Band 0	Band 1	Band 2	Band 3
	0	**1–4**	**5–7**	**8–10**
Understanding the influence of different organisations/ individuals.	Level of response not worthy of credit.	Demonstrates isolated elements of knowledge of the influence of different organisations/individuals, on research and/or health issue, with major gaps or omissions.	Demonstrates mostly accurate knowledge and understanding of the influence of different organisations/individuals on research and health issues.	Demonstrates accurate and detailed knowledge and understanding of the influence of different organisations/individuals research and health issues.
		A basic explanation of how the organisation/individual may have an influence is given, but with general statements made and limited links to the article.	An explanation of how these organisations/individuals may influence the issue is given, occasionally supported through some linkage and application to the article.	An explanation of how these organisations/ individuals may influence the issue is given, supported throughout with linkage and application to the article.

Indicative content

Learners:

- **may include other valid suggestions, not listed below, which should be credited**
- **may cover a number of examples from the list below**
- **would NOT be expected to cover all points to get full marks.**

Organisation	Influence of scientific issue
NHS	Publicly-funded healthcare system Provides healthcare information Diagnoses and treats STIs
British Medical Journal	Scientific journal likely to be peer reviewed Publishes research Provides informed opinion
World Health Organization	United Nations agency Provides guidance to governments, food industry and general public on health matters Funds research
Family Planning Association	Registered charity Provides the public with information on sexual health
Department for Education	Part of UK Government Consults on policy regarding education
Public Health England (PHE)	UK Government agency, part of Department for Health and Social Care Consults on policy regarding health issues

UK Government	Duty to provide for the wellbeing of its citizens Publishes scientific guidelines Provides funding for research, organisations and media Decides policy on sexual health service funding
American Sexual Health Association	Non-profit Seeks to improve sexual health through raising awareness and providing education
Terrence Higgins Trust (THT)	Leading sexual health charity in the UK Seeks to improve sexual health through raising awareness and providing education Publishes scientific research
British Association for Sexual Health and HIV (BASHH)	Sexual health charity in the UK Seeks to improve sexual health through raising awareness and providing education Publishes scientific research
Daily Mail	Tabloid newspaper Publishes summaries of reports to inform and entertain
Faith bodies	Authoritative individuals in faith communities May discourage open discussion of STI, help to maintain the stigma attached to the subject, encourage parents to withdraw schoolchildren from sexual health education classes
Pharmaceutical companies	Research and develop drugs used for the treatment of STI

Individuals	Influence of scientific issue
Theo Vos	PhD Professor of Health Metrics Science University of Washington – reputation unknown
Harry Howard	Journalist – reputation unknown
Yingying Wang	PhD University of Cincinnati – reputation unknown
Kay Devlin	Journalist – reputation unknown

Activity 4: Suggest potential areas for further development and/or research of the STI issue.

(6 marks)

Assessment focus	Band 0	Band 1	Band 2	Band 3
	0	**1-2**	**3–4**	**5–6**
Application of understanding to identify areas for further development and/or research.	Level of response not worthy of credit.	Demonstrates isolated elements of knowledge of the health issue.	Demonstrates mostly accurate knowledge and understanding of the health issue.	Demonstrates accurate and detailed knowledge and understanding of the health issue.
		limited identification of areas for further development and/or research.	A description for further areas of development and/or research is given, occasionally supported through some linkage and application to the article.	A description for further areas of development and/or research is given, supported throughout with linkage and application to the article.

Indicative content

Learners:

- **may include other valid suggestions, not listed below, which should be credited**
- **may cover a number of examples from the list below**
- **would NOT be expected to cover all points to get full marks.**

Further research:

- increase range of STIs investigated for the effect on men and women
- gather data from UK or worldwide to see if the same trends and levels of infection are consistent
- research if the effect on women over men is the same for all age groups
- further research into the relationship between gender and STIs
- sociological research into other factors, such as age, number of sexual partners, etc.

Further development:

- develop education and understanding of STIs
- addressing the issue of stigma around getting tested
- comment on the money saved by defunding sexual health services is significantly outweighed by the cost of treating the complications caused by undiagnosed STIs
- a continued effort to de-stigmatise sex and STIs so that people will not be ashamed to seek the help they need and learn more about the potential dangers
- a greater focus in schools on educating people about the risks of STIs and encouraging regular checks
- (fund) research with a view to develop and market self-diagnosis tests.

Activity 5: A recent news headline said:

STIs are on the rise – everyone should be tested yearly.

You have been asked to write an article for a health magazine discussing the idea that everyone over 16 years old should be tested for STIs every year.
When writing your article you must consider:

- **who is likely to read your article**
- **what you would like the reader to learn from your article.**

(16 marks)

Assessment focus	Band 0	Band 1	Band 2	Band 3	Band 4
	0	**1–4**	**5–8**	**9–12**	**13–16**
Synthesises content ideas and demonstrates an understanding of scientific reporting.	Level of response not worthy of credit.	Identifies some of the key information from the articles.	Summarises the key information and evidence from the articles.	Summarises and attempts to draw together key information using common elements from the articles.	Summarises and consistently draws together key information using common elements from the articles.
		Demonstrates limited understanding of audience or purpose.	Demonstrates some understanding of audience and purpose by some appropriate use of writing style and terminology.	Demonstrates good understanding of audience and purpose by using mostly appropriate writing style and terminology.	Demonstrates comprehensive understanding of audience and purpose by using appropriate writing style and terminology throughout.
		The response will be unstructured and limited to basic points made.	The response shows some structure and coherence.	The response shows a structure that is mostly clear, coherent and logical.	The response shows a well-developed structure that is clear, coherent and logical.

Indicative content

Learners:

- **may include other valid suggestions, not listed below, which should be credited**
- **may cover a number of examples from the list below**
- **would NOT be expected to cover all points to get full marks.**

- a definition of STI
- reference to specific consequences of untreated STIs
- suggestion that the risk of STIs is not equal between men and women and so maybe only test for some where the risk is higher
- positives to testing for STIs yearly
- benefits to yearly testing, including people without symptoms then getting treatment
- benefit in having confidence in own sexual health so not unknowingly a carrier of disease
- possible outcome that some STIs could be eradicated
- reference to the data supporting the argument
- negatives to testing for STIs yearly
- time and financial implications, strain on NHS/testing resources
- definition of 'everybody'
- comment that not everyone over 16 years old will be sexually active
- data shows that the age group with fast increasing rate of STIs is actually older people – as there is no risk of pregnancy so many do not use condoms and divorce rate in this group means less monogamy
- personal choice versus mandatory testing, everyone 'should' be tested yearly versus everyone 'offered' testing yearly
- objections on grounds of civil liberty, religious sensibilities, irrelevance to sexually-inactive or monogamous
- the article should be targeted at readers of a health magazine who may not understand scientific terms
- an attempt to tackle the social stigma surrounding discussion of STIs.

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